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On-line Case Report

An unusual case of a ureteric hernia into the sciatic foramen causing urinary sepsis: successfully treated laparoscopically

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ABSTRACT

We present the rare case of a ureteric hernia into the sciatic foramen. The presentation was that of a 59-year-old woman with urinary tract sepsis associated with an acute deterioration of renal function. The hernia was successfully repaired laparoscopically.

Keywords: Ureteric hernia – Sciatic foramen – Urinary tract sepsis – Renal function

Herniation of the ureter is a rare, but potentially serious, cause of ureteral obstruction. Until 1992, there were 128 cases of ureteral herniation reported in the literature with the most common region for ureteral herniation outside the abdominal cavity being the inguinoscrotal region.[1] The most common age of presentation is between 40–60 years and, in women, isolated ureteral hernias are most often femoral.[1]

Ureteral hernias into the sciatic foramen are extremely rare. To our knowledge there have only been four cases reported[2–5] with the most recent being in 1985. All cases presented with colicky ureteral pain, as did our patient. The more recent case reports that the patient had a urinary tract infection, as did our patient. Imaging has shown dilated hydroureters with a loop of ureter present at the sciatic foramen. Treatment has consisted of open operation to dissect the ureter free from the sciatic foramen and then ensuring that the ureter is held away from the defect. Our case has demonstrated that this rare herniation of the ureter can be successfully treated laparoscopically, without the need for open operation.

Case report

Presentation and initial investigation

A 59-year-old Caucasian woman presented to accident and emergency in septic shock. She was confused and complained of colicky abdominal pain. On examination, she had a temperature of 38.9°C, a tachycardia of 160 beats/min and there was pus discharging from the urethra. She had not previously suffered from any urinary tract symptoms although she had a 30-year history of multiple sclerosis and was wheelchair-bound.

Her blood tests revealed elevated inflammatory markers with a white count of 23.4 and a CRP of 135. Urea and creatinine were also raised at 8.4 and 94, respectively. She was catheterised, commenced on broad spectrum antibiotics and given i.v. fluids. A urinary specimen was sent for culture. Two days post admission, she continued to spike temperatures and the CRP rose to 221. *Proteus* spp. were identified on the urinary culture and appropriate antibiotics were commenced.

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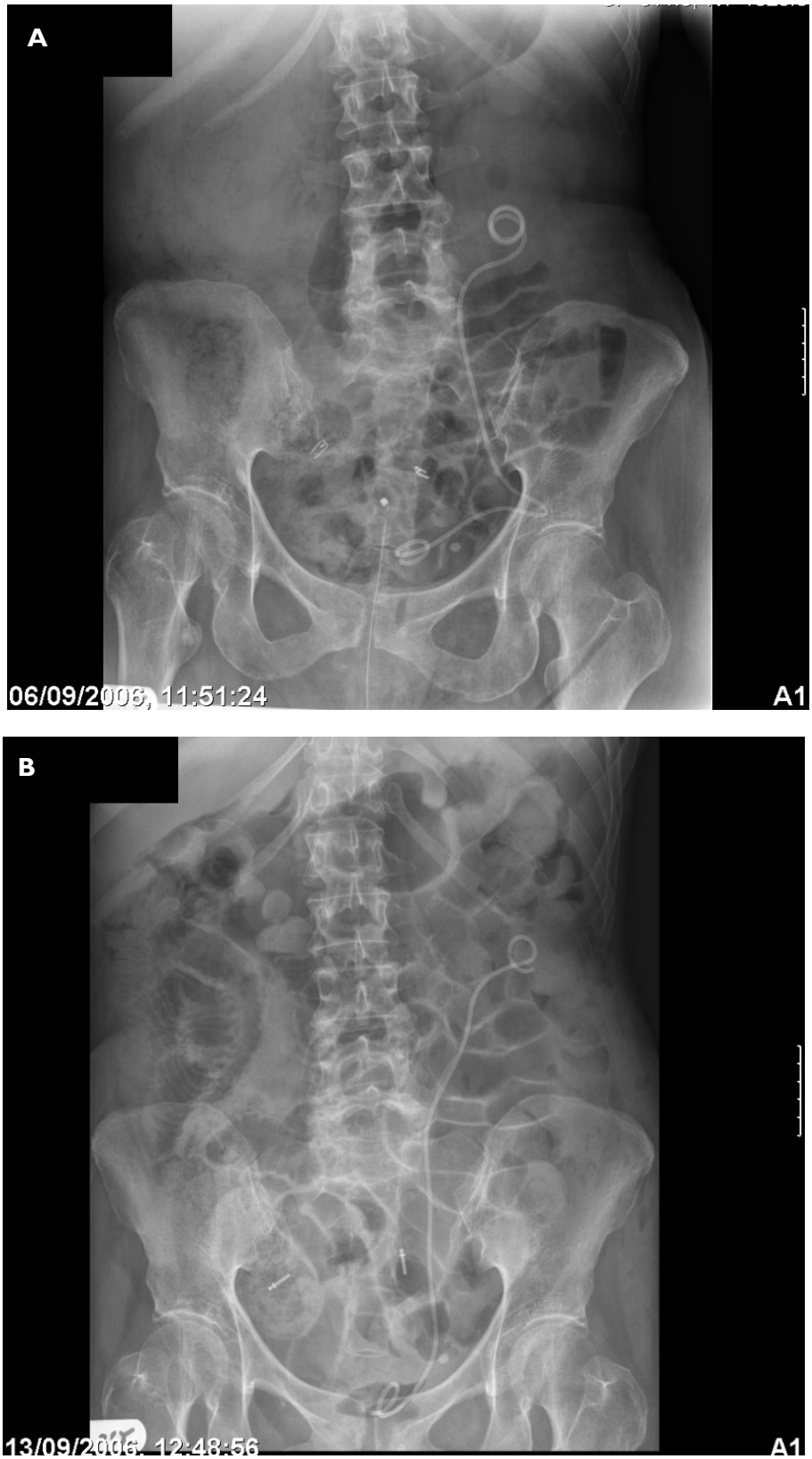

Figure 1 X-ray KUB. (A) JJ stent looping into the sciatic foramen. (B) After laparoscopic hernia repair, the JJ stent has returned to a normal anatomical position.

Renal ultrasound reported gross left-sided renal pelvis and calyceal dilatation with the renal pelvis measuring 4.2 cm. No evidence of renal calculi was seen. Due to her continued symptoms, a MAG3 nuclear medicine scan was performed. This reported acute deterioration of left renal function with a left differential function of 34%. CT KUB identified that the left ureter was grossly dilated and ran an unusual and convoluted course through the pelvis. It was speculated that there could be an internal hernia involving the left ureter. Consequently, it was decided to perform a cystoscopy and retrograde studies to confirm this.

Operative management

At cystoscopy, the bladder was inspected and no abnormality was detected. A left retrograde demonstrated a grossly dilated left ureter and pelvicalyceal system with herniation of the ureter into the sciatic foramen. With some technical difficulty, a ureteric catheter was inserted over a guide wire to deploy a JJ stent under image guidance.

A postoperative KUB was performed and clearly showed the JJ stent herniating into the sciatic foramen (Fig. 1A). However, a postoperative MAG3 scan reported further deterioration of left renal function with the left kidney contributing just 24% of total function. Due to concern that the JJ stent was not functioning adequately, it was decided to attempt ureteroscopy to change the stent and to achieve hernia reduction.

Unfortunately, it was not possible to negotiate the hernial loop of the ureter with the ureteroscope. Therefore, a guide-wire was inserted under image guidance into the left kidney and the JJ stent was successfully replaced. To achieve hernia reduction, the patient was re-positioned into a right lateral position with the head down and the laparoscopic procedure was then commenced. Adhesions were divided from the anterior peritoneum. The descending and sigmoid colon were mobilised and reflected medially. Gonadal vessels were then identified and preserved. The left ureter was identified and seen to be grossly dilated from the renal pelvis all the way to the sciatic foramen. The ureter was mobilised using blunt dissection and freed from the sciatic notch. Adherent lipomatous tissue was dissected from the ureter. A Prolene mesh was plugged into the hernial orifice. Peritoneum and a portion of the broad ligament were patched across the mesh to close the remaining defect and provide re-inforcement.

Postoperative recovery

After laparoscopic repair, the X-ray KUB was repeated and demonstrated that the JJ stent no longer looped into the sciatic foramen and had returned to its normal anatomical position (Fig. 1B).

The MAG3 scan was repeated and this time an improvement in renal function was seen with the left kidney now providing 41% of total renal function. White cell count, CRP and renal function tests all returned to within normal limits and she was discharged on the sixth postoperative day. Three weeks later, she was admitted as a day-case procedure for removal of the JJ stent. Two months subsequently, a MAG3 demonstrated good uptake in both kidneys with the left kidney providing 48% of total renal function.

Discussion

Ureteric herniation into the sciatic foramen is extremely rare. However, we believe it should be considered as a possible diagnosis in a patient with colicky abdominal pain, urinary sepsis and acute deterioration of renal function where no other apparent cause is identified. The hernia may be identified with intra-operative retrograde studies or by following the course of a JJ stent on X-ray KUB. We have shown that such hernias are unlikely to be corrected by placing a JJ stent alone. In fact, the placement of a JJ stent may even be associated with a further deterioration of renal function. We have also demonstrated that ureteric hernias into the sciatic foramen can be successfully treated laparoscopically. This repair results not only in anatomical correction but also in physiological and symptomatic improvement.

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